

CLAIMS

1. (Currently Amended) ~~Compounds~~A composition comprising at least one of hydrolysates or condensates of epoxy-and silane-functional oligomers and polymers, prepared by at least one of hydrolyzing or condensing at least one of an oligomer or polymer (A), wherein the oligomer or polymer (A) is selected from the group consisting of copolymers of olefinically unsaturated monomers, containing at least one epoxide group (a1) and at least one hydrolyzable silane group (a2), wherein the composition is characterized in being prepared in the presence of at least one kind of nanoparticles.
2. (Currently Amended) ~~Compounds~~The compositions as claimed in claim 1, wherein the at least one oligomer or polymer (A) is ~~condensable~~ condensed by means of a sol-gel process.
3. (Currently Amended) ~~Compounds~~The compositions as claimed in claim 1, prepared by at least one of hydrolysis or hydrolysis and condensation of the at least one oligomer or polymer (A).
- 4-5. (Canceled)
6. ((Currently Amended) ~~Compounds~~The composition as claimed in claim 5, wherein the oligomer and the polymer (A) are (meth)acrylate copolymers.
7. (Currently Amended) ~~Compounds~~The composition as claimed in claim 1, wherein the molar ratio of epoxide groups (a1) to hydrolyzable silane groups (a2) in an oligomer polymer (A) is from 1.5 : 1 to 1 : 1.5.
8. (Currently Amended) ~~Compounds~~The composition as claimed in claim 1, wherein the hydrolyzable silane groups (a2) have the general formula II:



in which the indices and variables are defined as follows:

R is a monovalent hydrolyzable atom or monovalent hydrolyzable group;

R¹ is a monovalent nonhydrolyzable radical;

m is an integer from 1 to 3, and

n is 0 or 1 or 2

with the proviso that m +n =3.

9. (Currently Amended) ~~Compounds~~ The composition as claimed in claim 8, wherein the monovalent hydrolyzable atom R is selected from the group consisting of hydrogen, fluorine, chlorine, bromine, and iodine and the monovalent hydrolyzable group R is selected from the group consisting of hydroxyl groups, amino groups -NH₂, and groups of the general formula III:



in which the variables are defined as follows:

X is selected from the group consisting of oxygen atom, sulfur atom, carbonyl group, carboxyl group, thiocarboxylic S-ester group, thiocarboxylic O-ester group ~~or and~~ amino group -NH- or -NR¹-,

R¹ is a monovalent organic radical comprising at least one of substituted aryl groups and unsubstituted aryl groups, alkyl, alkenyl or alkynyl groups selected from the group consisting of substituted, unsubstituted, branched, unbranched, cyclic and noncyclic groups.

10. (Currently Amended) ~~Compounds~~ The composition as claimed in claim 1 comprising oligomer and polymer (A) are prepared by copolymerizing at least one monomer (a1) containing at least one epoxide group (a1) with at least one monomer (a2) containing at least one hydrolyzable silane group (a2)

11. (Currently Amended) ~~Compounds~~ The composition as claimed in claim 10, wherein the monomers (a1) and (a2) are copolymerizable with at least one further monomer, (a3) other than (a1) and (a2).

12. (Currently Amended) ~~Compounds~~ The composition as claimed in claim 10, wherein the monomers (a1), (a2), and (a3) contain at least one olefinically unsaturated group.

13. (Currently Amended) ~~Compounds~~ The composition as claimed in claims 10, wherein the olefinically unsaturated groups are at least one of methacrylate or acrylate groups.

14. (Currently Amended) ~~Compounds~~ The composition as claimed in claim 10, wherein the oligomer and the polymer (A) are prepared by free-radical copolymerization of the monomers (a1), (a2), and (a3).

15. (Currently Amended) ~~Compounds~~ The composition as claimed in claim 10, wherein the monomer ratio of monomer (a1) to monomer (a2) is from 1.5:1 to 1:1.5.

16. (Withdrawn-Currently Amended) A process for preparing the ~~compounds~~ composition as claimed in claim 1, which comprises at least one of hydrolyzing or condensing the oligomers and/or polymers (A) at a pH < 7.

17. (Withdrawn) The process as claimed in claim 16, wherein the at least one of hydrolysis or condensation is conducted in the presence of an organic acid.

18. (Withdrawn) The process as claimed in claim 16 or 17, wherein the at least one of hydrolysis or condensation is conducted at from -10 to +50°C.

19. (Canceled)

20. (Canceled)

21. (Currently Amended) ~~Compounds~~ The composition according to claim 1, wherein the (meth)acrylate copolymer (A) contains at least one of lateral or terminal epoxide groups (a1) and at least one of lateral or terminal hydrolyzable silane groups (a2) of the general formula II:



in which the indices and variables are as defined as:

R is a monovalent hydrolyzable atom or monovalent hydrolyzable group;

R¹ is a monovalent nonhydrolyzable radical;

m is an integer from 1 to 3, and

n is 0 or 1 or 2

with the proviso that m + n = 3,

in a molar ratio (a1):(a2) of from 1.5 :1 to 1:1.5.

22. (Canceled)

23. (New) The composition of claim 1 wherein the nanoparticles are cationically stabilized.

24. (New) A compositions comprising at least one of hydrolysates or condensates of epoxy- and silane-functional oligomers and polymers, prepared by at least one of hydrolyzing or condensing at least one of an oligomer or polymer (A), wherein the oligomer or polymer (A) is selected from the group consisting of copolymers of olefinically unsaturated monomers, containing at least one epoxide group (a1) and at least one hydrolyzable silane group (a2), wherein the composition is characterized in being prepared in the presence of nanoparticles having a primary particle size of from 5 to 50 nm, which nanoparticles are metals of oxides, oxide hydrates, sulfates, hydroxides or phosphates oxides, wherein the metals are selected from the group consisting of boron, aluminum, gallium, silicon, germanium, tin, arsenic, antimony, silver, zinc, titanium, zirconium, hafnium, vanadium, niobium, tantalum, molybdenum, tungsten, and cerium.

25. (New) The composition of claim 24 wherein the nanoparticles are cationically stabilized oxides, oxide hydrates, or hydroxides of aluminum or silicon.